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December 16, 1991

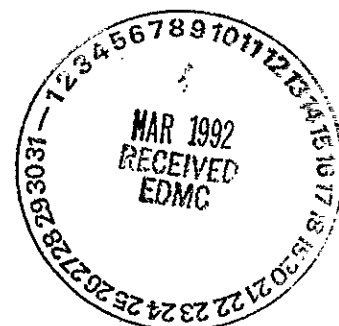
Meeting Minutes Transmittal/Approval
200-BP-1 Operable Unit Managers Meeting
450 Hills Street, Richland, WA
November 21, 1991

From/ Appvl.: Allan Harris Date: 1-22/92
Allan Harris, 200-BP-1 Unit Manager, DOE-RL (A5-19)
Appvl.: Douglas R. Sherwood Date: 12/17/91
Doug Sherwood, 200-BP-1 Unit Manager, EPA (B5-01)
Appvl.: Larry Goldstein for LG Date: 12/17/91
Larry Goldstein, 200-BP-1 Unit Manager, WA Department of Ecology

Meeting Minutes are attached. Minutes are comprised of the following:

- Attachment #1 - Meeting Summary/Summary of Commitments and Agreements
- Attachment #2 - Attendance List
- Attachment #3 - Agenda for the Meeting
- Attachment #4 - Status of Action Items
- Attachment #5 - Approved Document Change Control Form
- Attachment #6 - Column Leach Testing
- Attachment #7 - 200-BP-1 Well Remediation
- Attachment #8 - 200-BP-1 Groundwater Well Sampling
- Attachment #9 - Source and Vadose Sampling
- Attachment #10 - Schedule
- Attachment #11 - Proposed Citing of 200-BP-1 Remedial Investigation
Phase 1B Groundwater Monitoring Well and Hydrologic
Test Well Installation

Prepared by: Doug Fassett Date: 1/24/92
SWEC Support Services
Concurrence by: M. D. B. [Signature] Date: 1/22/92
WEC RI Coordinator



**200-BP-1 Operable Unit Managers Meeting
November 21, 1991**

Distribution

Donna Lacombe, PRC
Ward Staubitz, USGS
Doug Fassett, SWEC (A4-35)
Linda Powers, WHC (B2-35)
Tom Wintczak, WHC (B2-15)
Mel Adams, WHC (H4-55)
Wayne Johnson, WHC (H4-55)
Rich Carlson, WHC (H4-55)
Brian Sprouse, WHC (H4-22)
Bill Price, WHC (S0-03)
Ralph O. Patt,
 OR Water Resources Dept.
Doug Dunster, Golder Assoc.
Mike Thompson, DOE (A6-95)
Diane Clark, DOE (A5-55)
Mark Buckmaster, WHC (H4-55)
Don Praast, GAO (A1-80)
David Pabst, WHC (B2-35)

Ronald D. Izatt (A6-95)
 Director, DOE-RL, ERD
Donald E. Gerton (A6-80)
 Director, DOE-RL, WMD
Roger D. Freeberg (A6-95)
 Chief, Rstr. Br., DOE-RL/ERD
Steven H. Wisness (A6-95)
 Tri-Party Agreement Proj. Mgr
Richard D. Wojtasek (B2-15)
 Prgm. Mgr. WHC
Mary Harmon, DOE-HQ (EM-442)

ADMINISTRATIVE RECORD: 200-BP-1; Care of Susan Wray, WHC (H4-51C)

Please inform Doug Fassett (SWEC) of deletions or additions to the distribution list.

7 2 1 2 4 6 3 1 5 3 5

Attachment #1

Meeting Summary and Summary of Commitments and Agreements

200-BP-1 Unit Managers Meeting November 21, 1991

Action Item Update

1. The status of outstanding action items was given by Mark Buckmaster (WHC) (see Attachment #4).

Work Plan

2. Mark Buckmaster outlined a work plan change (see Attachment #5). Under Task 4, sample blank analyses will be included for each additional borehole. Each borehole will be defined as a sample delivery group.

Remedial Investigation

3. Mark Buckmaster said draft copies of the pump tests had been previously distributed to the regulators and that comments had not been received yet. The pump test activity is to begin next month. Rich Hibbard (Ecology) inquired about handling the drums of waste generated through sampling activities, and Mr. Buckmaster stated an agreement had been made several months ago through a change request to designate the waste from sample collection at a certain time. The 90-day clock is to start when the sample results are received for designated waste. Mr. Buckmaster stated this waste would essentially be disposed of in accordance with EII 4.2.
4. The status of the column leach tests was presented by Mark Buckmaster (see Attachment #6). Mr. Buckmaster said it is planned that work activity be set up by early December 1991. Ward Staubitz (USGS) said he would like to see particle size distribution if it was available.
5. Mark Buckmaster gave an update on well remediation (see Attachment #7). All surface seals have been completed for wells in the 600 Area. Posts and pads have been completed on four of the wells and should be completed on the remaining 600 Area wells by the first week of December 1991. A site safety plan for the 200 Area wells is in place, and work activity should begin the first part of December 1991.
6. Mark Buckmaster presented an update of groundwater sampling (see Attachment #8). Analytical data for the first quarter has been transmitted. Mr. Buckmaster said PNL radio-chemical data would be transmitted to the regulators when it is received. At the request of Doug Sherwood (EPA), plume maps for the first quarter data have been prepared and some rough numbers for the second quarter were compiled.
7. Mark Buckmaster provided a year-to-date status of the crib drilling activity (see Attachment #9). Drilling has started on 43A, which is the

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final deep hole. Work progress has been delayed due to the weather, down time, and levels of radiation greater than anticipated in all of the cribs to date.

8. Steve Trent (WHC) presented an update on Task 6, Phase IB wells (see Attachment #11). Mark Buckmaster indicated the planned schedule for installation of the plume delineation well and remediation of the Phase IB wells is to be completed in Phase I RI.
9. Mark Buckmaster provided an update on scheduled activities (See Attachment #10). The only activity left under Task 3 is leak detection, which is proceeding. The schedule shows Task 4 being completed by the end of December 1991; it is now projected to be completed by the end of January 1992. All the Phase I wells are in, and what to do with the final Phase IB wells is being discussed. Mr. Buckmaster said he hoped to get a plan for the sorption test out for review next month.

7 2 1 2 4 6 3 1 5 8 7

Attachment #2

Attendance 200-BP-1 Operable Unit Managers Meeting November 21, 1991

<u>Name</u>	<u>Org.</u>	<u>O.U. Role</u>	<u>Phone</u>
Jon Sprecher	B & C	Ecology Support	503-244-7005
Chuck Cline	Ecology	Hydrogeology	206-438-7556
Rich Hibbard	Ecology	Ecology Support	206-493-9367
Billie Mauss	Ecology	Chemist	509-546-2993
Darci Teel	Ecology	OUM Support	509-545-2312
Dave Einan	EPA	Project Manager	509-376-3883
Donna LaCombe	PRC	EPA Contractor	206-624-2692
Bill Fryer	SWEC	GSSC, DOE-RL	509-376-9830
Joe King	SWEC	GSSC, DOE-RL	509-376-4726
Bill McClung	SWEC	GSSC, DOE-RL	509-376-1853
Brian Drost	USGS	EPA Support	206-593-6510
Ward Staubit	USGS	EPA Support	206-593-6510
Mark Buckmaster	WHC	RI Coordinator	509-376-1792
Richard Carlson	WHC	Env. Engineer	509-376-9027
Hal Downey	WHC	ER Program Office	509-376-5539
Jeff Lerch	WHC	OSM	509-373-3419
Craig Swanson	WHC	Aquifer Testing	509-376-1438
Steve Trent	WHC		509-376-7226

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Attachment #3

**Agenda
200-BP-1 Operable Unit Managers Meeting
November 21, 1991**

Introduction:

Status:

Action Items:

Work Plan:

- o Task 2/4 Composite and QC Samples

Remedial Investigation:

- o Column Leach
- o Well Remediation
- o Groundwater Sampling
- o Source and Vadose Sampling

Issues:

Other Topics:

- o Task 6 Phase IB Wells
- o Schedule

Agreements and Commitments:

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Attachment #4

Action Items
200-BP-1 Operable Unit Managers Meeting
November 21, 1991

<u>Item Number</u>	<u>Action</u>	<u>Status</u>
2BP1.49	Written comments are to be submitted on the column leach test procedure at 200-BP-1. Action: D. Sherwood (9/18/91)	Open:

0
5
1
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2

200-BP-1 UNIT MANAGERS MEETING AGENDA
NOVEMBER 20, 1991
2:30-4:00 PM
450 HILLS ST., ROOM 47

Introduction:

Status:

Action Items:

Work Plan:

- o Task 2/4 Composite and QC Samples

Remedial Investigation:

- o Column Leach
- o Well Remediation
- o Groundwater Sampling
- o Source and Vadose Sampling

Issues:

Other Topics:

- o Task 6 Phase IB Wells
- o Schedule

Agreements and Commitments:

9 2 1 2 1 6 3 1 5 9 1

ACTION ITEMS

<u>Item Number</u>	<u>Action</u>	<u>Status</u>
2BP1.49	Written comments are to be submitted on the column leach test procedure satisfying the DQO's of the Work Plan. Action: Sherwood (9/18/91)	Open:

2 2 1 2 4 6 3 1 5 9 2

ATTACHMENT 1

FIELD QUALITY CONTROL SAMPLES - TASK 4

BOREHOLE	FIELD BLANK	EQUIPMENT BLANK	TRIP BLANK	DUPLICATE	SPLIT
216-B-57A	X	X	X	X	X
216-B-49A	X	X	X	X	-
216-B-43A	X	X	X	X	X

Approximately 40 soil samples will be collected.

FIELD QUALITY CONTROL SAMPLES - TASK 2

CRIB*	FIELD BLANK	EQUIPMENT BLANK	TRIP BLANK	DUPLICATE	SPLIT
216-B-44	X	X	X	X	**
216-B-45	X	X	X	X	**
216-B-46	X	X	X	X	**
216-B-47	X	X	X	X	**
216-B-48	X	X	X	X	**
216-B-50	X	X	X	X	X
216-B-61	X	X	X	X	-

* Three shallow boreholes in each of these cribs with one set of QC samples per crib.

** A total of three judicious random split samples will be collected for Task 2 over the course of drilling. Since the 216-B-50 crib will be drilled first, a split will be required.

Approximately 100 soil samples will be collected for Task 2.

In the event that insufficient sample material is available to submit for analysis, the priority for analysis shall be the following, as determined by the project coordinator:

1. Radionuclides
2. Inorganic
3. Organics

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COLUMN LEACH TESTING

BOREHOLE: B-57A

FEET BELOW GROUND SURFACE	FIELD TRACKING NUMBER	HEIS SAMPLE NUMBER	ACTIVITY
29.0	216-B-57A-CL-29(D)	B01064	<DETECTION
33.0	216-B-57A-CL-33(A,D)	B01065 *	62 nCi/gm Cs-137
58.0	216-B-57A-CL-58(D)	B01075	<DETECTION
84.5	216-B-57A-PH(CL)-84.5(D)	B01085	<DETECTION
112.0	216-B-57A-PH-112-CL(D)	B01096	<DETECTION
141.5	216-B-57A-PH-141.5-CL(D)	B010C2 *	<DETECTION
169.0	216-B-57A-PH(CL)-169(D)	B010D2	<DETECTION
197.0	216-B-57A-PH(CL)-197(C)	B011X9	<DETECTION
227.5	216-B-57A-PH(CL)-227.5(C)	B011X1	<DETECTION
235.5	216-B-57A-PH(CL)-235.5(D)	B011X4	<DETECTION

* Selected Column Leach Sample

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BOREHOLE: B-49A

FEET BELOW GROUND SURFACE	FIELD TRACKING NUMBER	HEIS SAMPLE NUMBER	ACTIVITY
20.0	216-B-49A-PH-20(D) (mistakenly labelled as a physical sample)	B010F1 *	23.7 nCi/gm Cs-137 39.4 nCi/gm Sr-90
27.5	216-B-49A-CL-27.5(C)	B010F2	<DETECTION
49.0	216-B-49A-PH(CL)-49(A)	B01068	334 pCi/gm Cs-137
77.5	216-B-49A-CL-77.5	B01068	147 pCi/gm total activity
107.0	216-B-49A-CL-107(C)	B01208	80.8 pCi/gm total activity
137.5	216-B-49A-CL-137.5(C)	B01218 *	64 pCi/gm total activity
164.5	216-B-49A-CL-164.5(C)	B01227	81.7 pCi/gm total activity
193.0	216-B-49A-CL-193.0(D)	B01238	174 pCi/gm total activity

* Selected Column Leach Sample

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200-BP-1 WELL REMEDIATION

21

WELL #	STATUS
699-47-50	12" CASING PREVENTED OVERDRILLING - EXCAVATE WITH BACKHOE TO REMOVE 12". SURFACE SEAL COMPLETED TO 17 FT.
699-47-60	SURFACE SEAL COMPLETED TO 17', POSTS AND PADS INSTALLED - PROBLEMS ENCOUNTERED WITH SHIFTING SANDS PREVENTED COMPLETION AT 18 FT.
699-49-55A	SURFACE SEAL COMPLETED TO 18', POSTS AND PADS INSTALLED
699-49-55B	SURFACE SEAL COMPLETED TO 18', POSTS AND PADS INSTALLED
699-50-53	SURFACE SEAL COMPLETED TO 18', POSTS AND PADS INSTALLED
699-55-57	SURFACE SEAL COMPLETED TO 18'
699-49-57	SURFACE SEAL COMPLETED TO 18'
699-53-55A	SURFACE SEAL COMPLETED TO 18'
699-53-55B	SURFACE SEAL COMPLETED TO 18'
699-53-55C	SURFACE SEAL COMPLETED TO 18'
699-54-57	SURFACE SEAL COMPLETED TO 18'
699-55-57	SURFACE SEAL COMPLETED TO 18'

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200-BP-1 GROUNDWATER WELL SAMPLING

1. The fourth quarter of groundwater sampling is on schedule.
 - o 31 wells have been sampled
 - o Minor delays have been encountered to accommodate well remediation activities.
2. Analytical Data:
 - o OSM Sample Tracking System
 - o Transmittal of first quarter data
 - o No second or third quarter validated data has been submitted.

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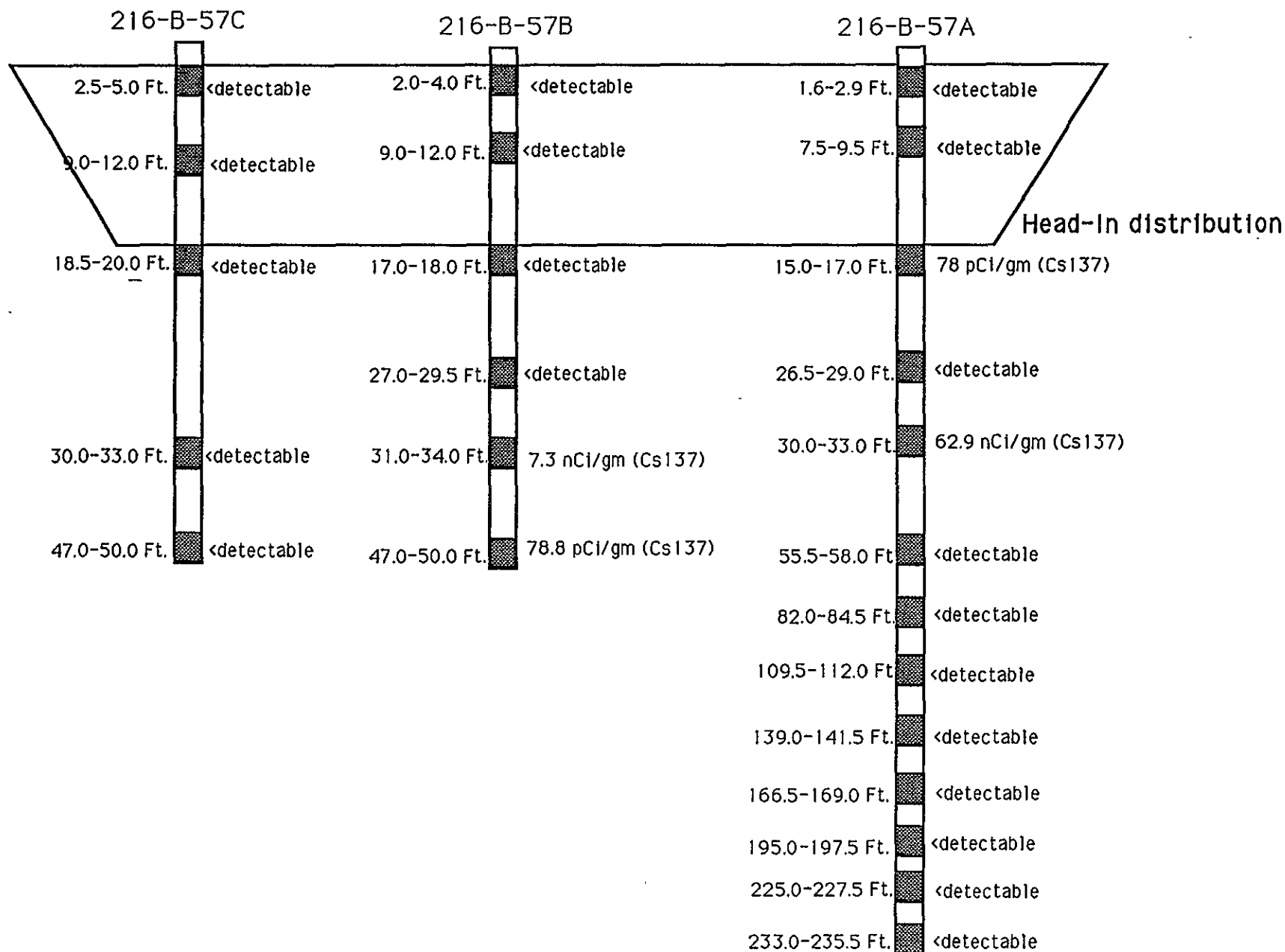
**SOURCE AND VADOSE SAMPLING
STATUS YTD-November 19, 1991**

BOREHOLE	STATUS	REMARKS
216-B-61	COMPLETE TD-30.2 FT	FIELD INSTRUMENTS - NO CONTAMINATION
216-B-57A	COMPLETE TD-235.5 FT	GENERAL CONTAMINATION BETWEEN 30-40 FT.
216-B-57B	COMPLETE TD-50.0 FT	GENERAL CONTAMINATION BETWEEN 30-40 FT.
216-B-57C	COMPLETE TD-50.0 FT	FIELD INSTRUMENTS - NO CONTAMINATION
216-B-49A	COMPLETE TD-235 FT	HIGHEST LEVEL OF CONTAMINATION - 8000 mR/hr BETA 1200 mR/hr GAMMA
216-B-50B	COMPLETE TD-33.0 FT	HIGHEST LEVEL OF CONTAMINATION - 400 mR/hr BETA
216-B-50C	COMPLETE TD-33.0 FT	HIGHEST LEVEL OF CONTAMINATION - 125 mR/hr BETA
216-B-43A	DRILLING - 20 FT	HIGHEST LEVEL OF CONTAMINATION - 4500 mR/hr BETA 1000 mR/hr GAMMA
216-B-49B	DRILLING - 21 FT	HIGHEST LEVEL OF CONTAMINATION - 450 mR/hr BETA
216-B-46B	MOBILIZING	SCHEDULED TO BEGIN 11/25/91
216-B-50A	COMPLETE TD-33 FT	HIGHEST LEVEL OF CONTAMINATION - 1200 mR/hr BETA

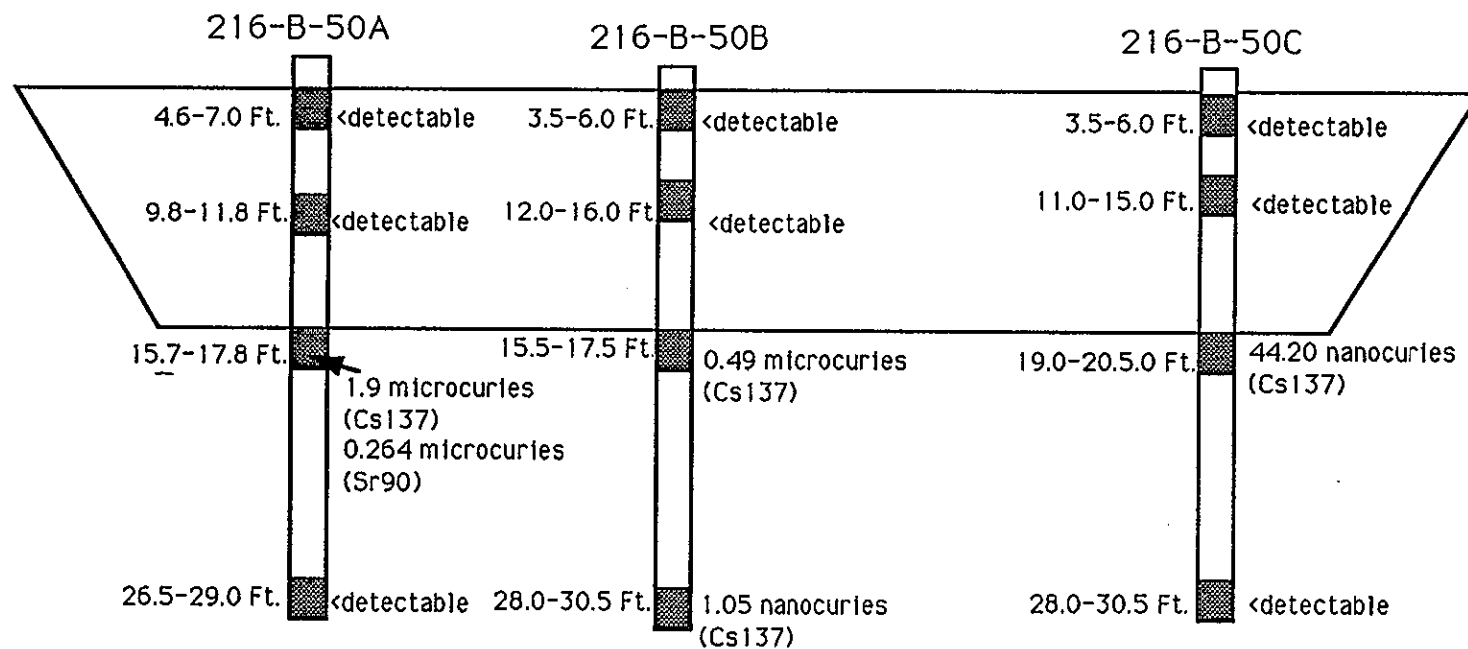
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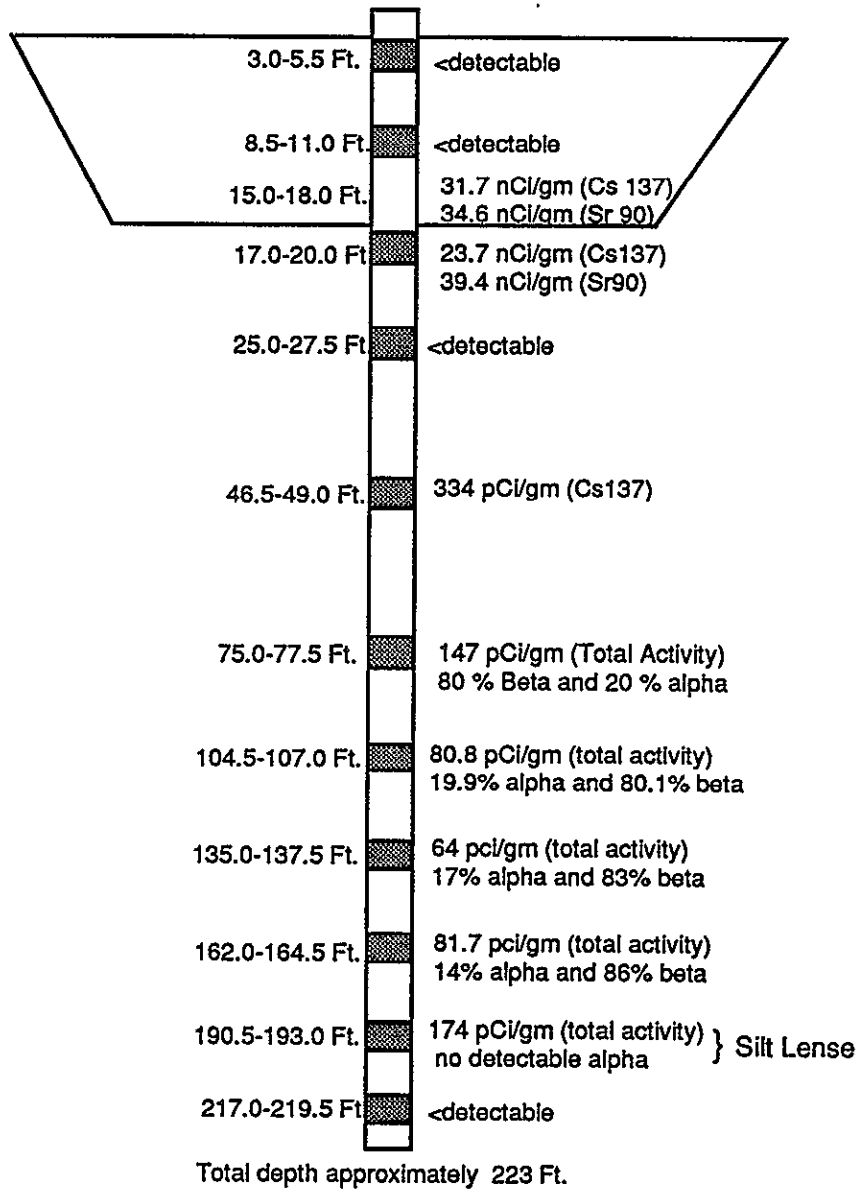
216-B-57 CRIB



7 2 1 2 4 6 3 1 6 0 1
216-B-50 CRIB



216-B-49 CRIB



21602

9 2 1 2 1 6 3 1 6 0 3

200-BP-1 OPERABLE UNIT

PHASE I REMEDIAL INVESTIGATION

TASK-1 MANAGEMENT & STATUS REPORTS

TASK-2 SOURCE SAMPLING AND ANALYSIS

TASK-2a PREPARATION

TASK-2b DRILLING AND SOIL SAMPLING

TASK-2c SAMPLE HANDLING AND TRANSFER

TASK-2d LABORATORY AVAIL. & CHEMICAL ANALYSIS

TASK-2e BOREHOLE GEOPHYSICS

TASK-2f GEODETIC SURVEY

TASK-2g BOREHOLE SURVEY

TASK-3 SURFACE/NEAR SURFACE SOIL SAMPLE/ANALYSIS

TASK-3a PREPARATION

TASK-3b EVALUATE & TEST LEAK DETECTION TECHNIQUE

TASK-3c SCINTILLATION SURVEY OF LAND SURFACE

TASK-3d STAGE 1 SOIL PROBE SURVEY

TASK-3e STAGE 2 SOIL PROBE SURVEY

TASK-3f SOIL SAMPLING

TASK-3g GEODETIC CONTROL & SURVEY

TASK-3h LABORATORY AVAIL. & CHEMICAL ANALYSIS

TASK-4 VADOSE ZONE SOIL SAMPLING & ANALYSIS

TASK-4a REVIEW & PREPARATION

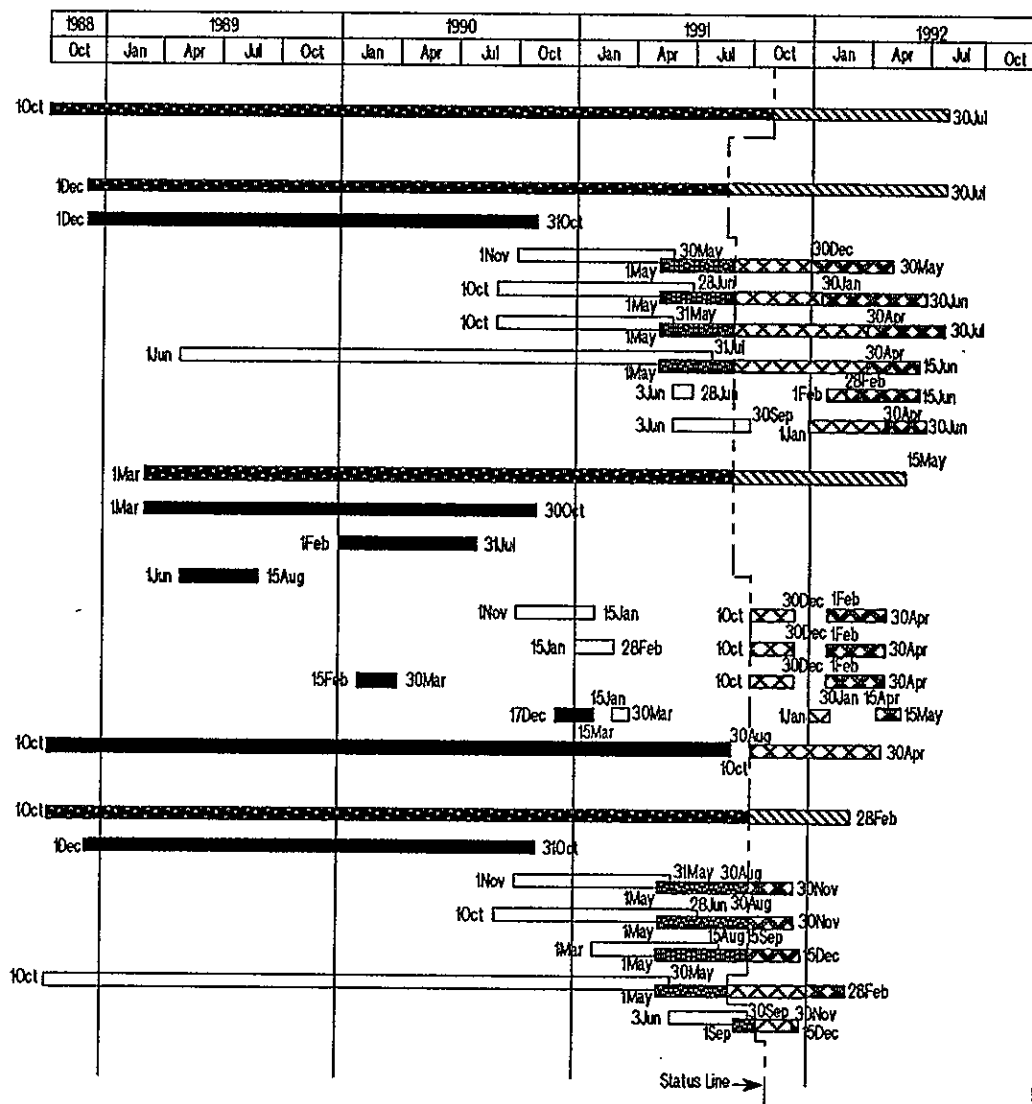
TASK-4b DRILLING & SAMPLING

TASK-4c SAMPLING, HANDLING & TRANSFER

TASK-4d BOREHOLE GEOPHYSICS

TASK-4e LABORATORY AVAIL. & CHEMICAL ANALYSIS

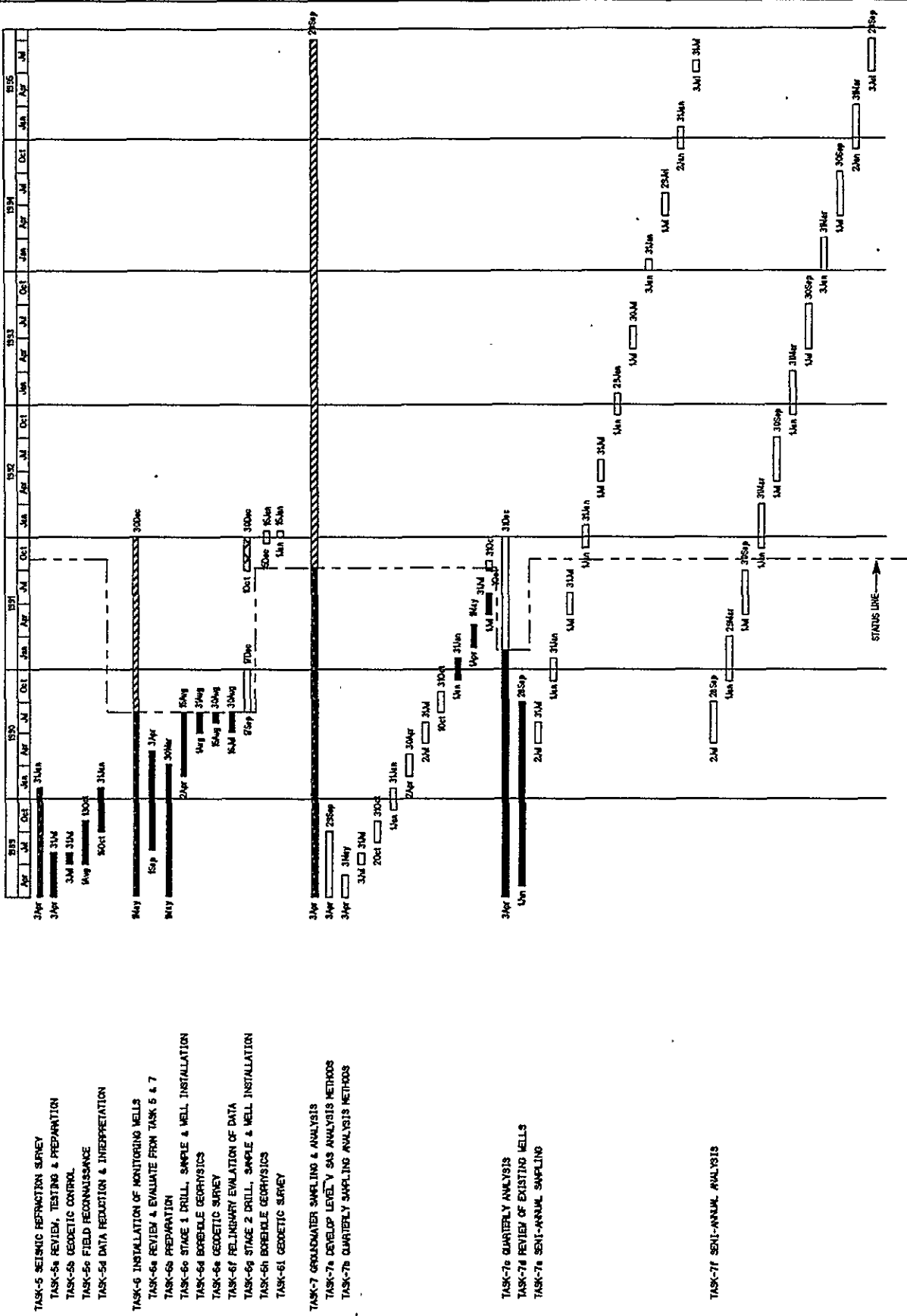
TASK-4f BOREHOLE ABANDONMENT



LEGEND:			
	ORIGINAL SCHEDULE ACTIVITIES	Project: PE13A	200BP1U Date: 18 Nov 91 06:33
	SUMMARY ACTIVITIES	200-BP-1 REMEDIAL INVESTIGATION (Pg. 1)	
	REVISED ACTIVITIES	Page: 1 of 3	Drawn by: Steve J. Sakay 6-3092
	ACTUAL ACTIVITIES		

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200-BP-1 OPERABLE UNIT



Project: FEUA	200BP20	Date: 10 Nov 01
2008-BP-1 OPERABLE UNIT (Pg.2)		
Page: 2 of 3	Drawn by: Steve J. Soley	6-2002

LEGEND

- PLANNED ACTIVITIES
- ▨ SCHEDULED ACTIVITIES
- ▩ REVIEWED ACTIVITIES
- COMPLETED ACTIVITIES

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200-BP-1 OPERABLE UNIT

TASK-8 SITE TOPOGRAPHIC MAP

TASK-8a PREPARATION

TASK-8b FIELD SURVEY

TASK-8c DATA REDUCTION ON CAD

TASK-9 BIOTA SURVEY

TASK-9a SITE RECONNAISSANCE

TASK-9b BIOTA SAMPLING

TASK-9c LABORATORY AVAIL. & CHEMICAL ANALYSIS

TASK-10 COLUMN LEACH TEST

TASK-10a PREPARATION

TASK-10b TESTING PERIOD

TASK-10c LABORATORY AVAIL. & CHEMICAL ANALYSIS

TASK-11 HYDRAULIC PUMP TESTS

TASK-11a PREPARATION

TASK-11b CONDUCT SLUG TEST

TASK-11c CONDUCT DRAWDOWN/RECOVERY TESTS

TASK-12 SORPTION TEST

TASK-12a PREPARATION

TASK-12b TEST PERIOD

TASK-12c LABORATORY AVAIL. & CHEMICAL ANALYSIS

TASK-13 BASELINE RISK ASSESSMENT

TASK-13a DATA COMPILATION

TASK-13b DATA ANALYSIS

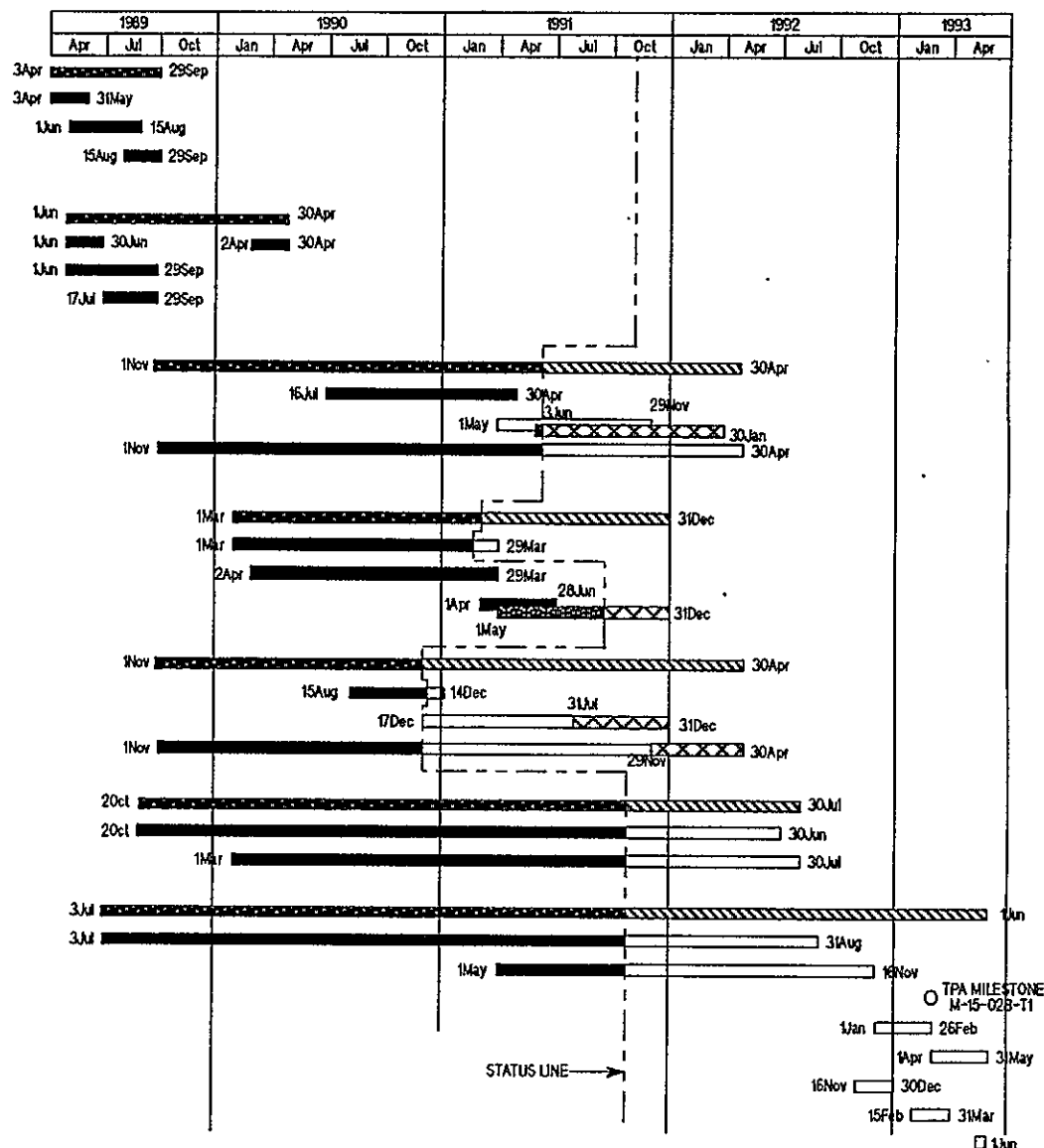
TASK-14 EVALUATION AND REPORT

TASK-14a EVALUATION AND REPORT

TASK-14b DRAFT REPORTS

TASK-14c FINAL REPORT & REVIEW

FINAL SECONDARY REPORT



LEGEND:

- ORIGINAL SCHEDULE ACTIVITIES
- ▨ SUMMARY ACTIVITIES
- ▤ REVISED ACTIVITIES
- ▧ ACTUAL ACTIVITIES

Project: PE13A 200BP13U Date: 18 Nov 91 07:47

200-BP-1 REMEDIAL INVESTIGATION (Pg.3)

Page: 3 of 3 Drawn by: Steve J. Sakey 6-3092

**PROPOSED SITING OF 200-BP-1
REMEDIAL INVESTIGATION PHASE 1B
GROUNDWATER MONITORING WELL
AND
HYDROLOGIC TEST WELL
INSTALLATION**

TASK 6 DATA OBJECTIVES

● PRIMARY DATA OBJECTIVES:

- 1) DELINEATE CONTAMINANT PLUMES IN THE UNCONFINED**
- 2) DETERMINE POTENTIAL FUTURE MOVEMENT AND EXTENT OF PLUMES EMANATING FROM THE 200-BP-1 O.U.**
- 3) DETERMINE TYPES AND CONCENTRATIONS OF CONTAMINANTS**
- 4) EVALUATE IMPACTS ON THE RATTLESNAKE RIDGE AQUIFER**
- 5) ESTABLISH CLUSTER WELL SYSTEMS TO EVALUATE THE VERTICAL HYDRAULIC GRADIENT DIFFERENTIAL BETWEEN THE CONFINED AND UNCONFINED AQUIFER SYSTEMS**
- 6) DETERMINE SUBSURFACE GEOLOGIC STRATIGRAPHY**
- 7) DETERMINE VADOSE ZONE SOIL PROPERTIES WITHIN THE O.U.**

● SECONDARY DATA OBJECTIVES:

- 1) DETERMINE AQUIFER HYDRAULIC PROPERTIES (IDENTIFIED IN TASK 11, 'AQUIFER TESTING')**

TASK 6: GROUNDWATER MONITORING WELL INSTALLATION

● NINE GROUNDWATER MONITORING WELLS INSTALLED

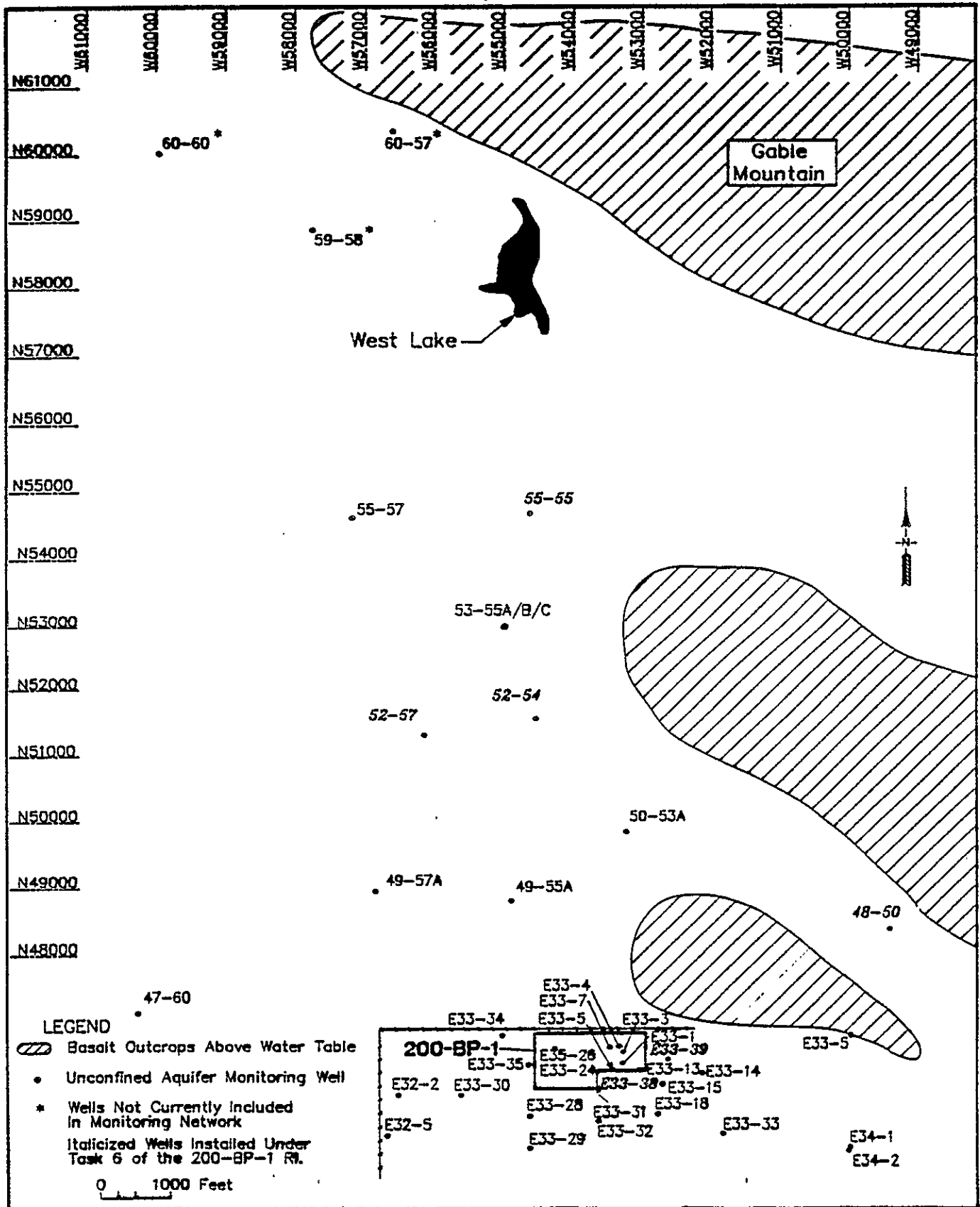
UNCONFINED AQUIFER

**299-E33-38
299-E33-39
699-48-50
699-52-54
699-52-57
699-55-55**

UPPERMOST CONFINED AQUIFER (RATTLESNAKE RIDGE AQUIFER)

**299-E33-40
699-49-57B
699-50-53B**

200-BP-1 Unconfined Aquifer Monitoring Network



PHASE IB GROUNDWATER MONITORING WELLS

● PURPOSE OF PHASE IB MONITORING WELLS:

- CONTINGENCY WELLS FOR NEW AND CRITICAL
NON-RCRA STANDARD MONITORING WELLS**
- FULFILL TASK 6 DATA OBJECTIVES**

PHASE IB GROUNDWATER MONITORING WELLS

(CONTINUED)

- **ALL NEW AND OLDER NON-RCRA STANDARD MONITORING WELLS PRODUCE QUALITY SAMPLES**
- **INADEQUATE CHARACTERIZATION OF CONTAMINANT PLUME GEOMETRY**

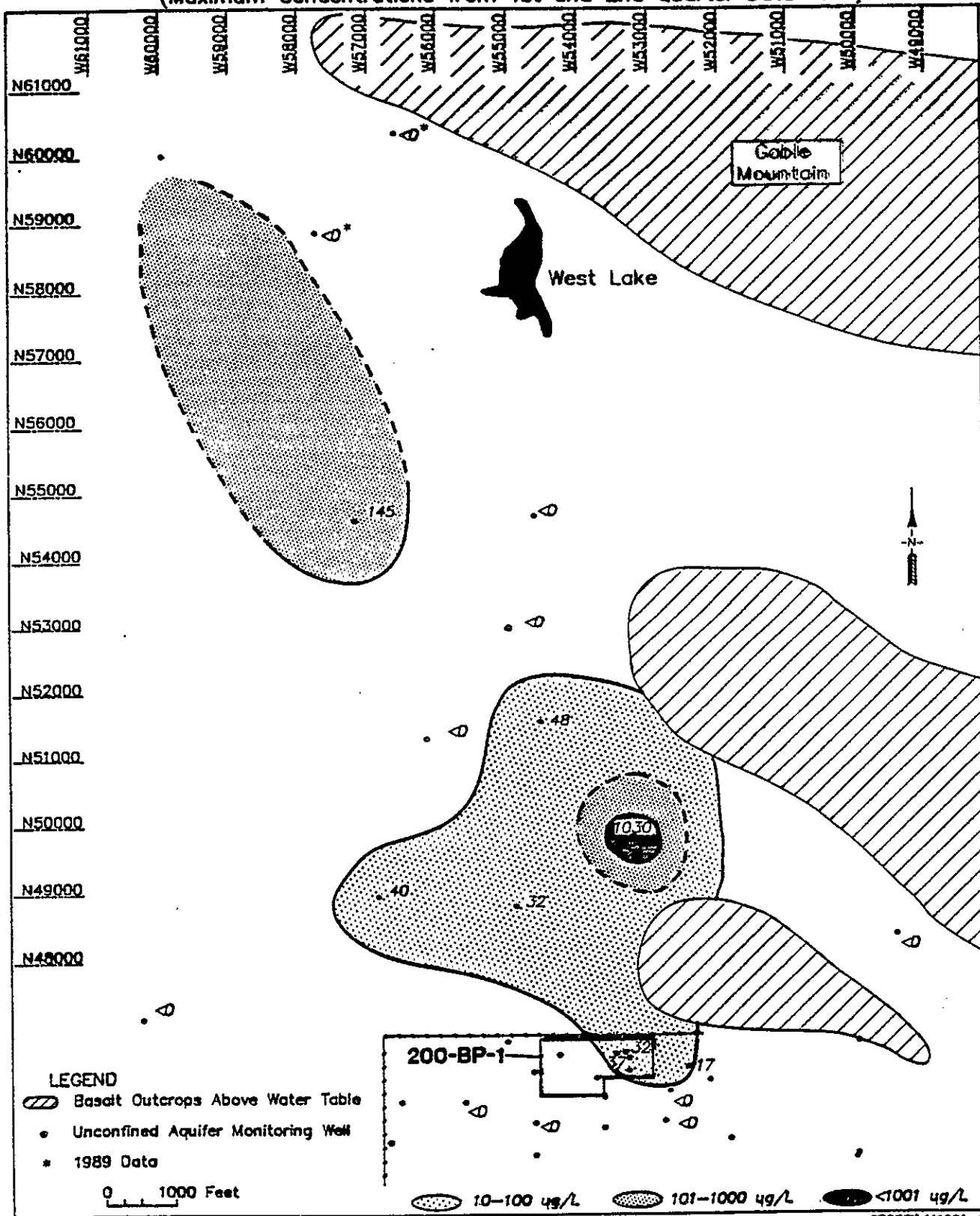
CONTAMINANT PLUME CHARACTERIZATION

- **DATA INDICATES THAT THE CONTAMINANT PLUME EMANATING FROM NORTH 200 EAST AREA IS BIMODAL**
- **NORTHERN MOST LOBE IS INADEQUATELY CHARACTERIZED**

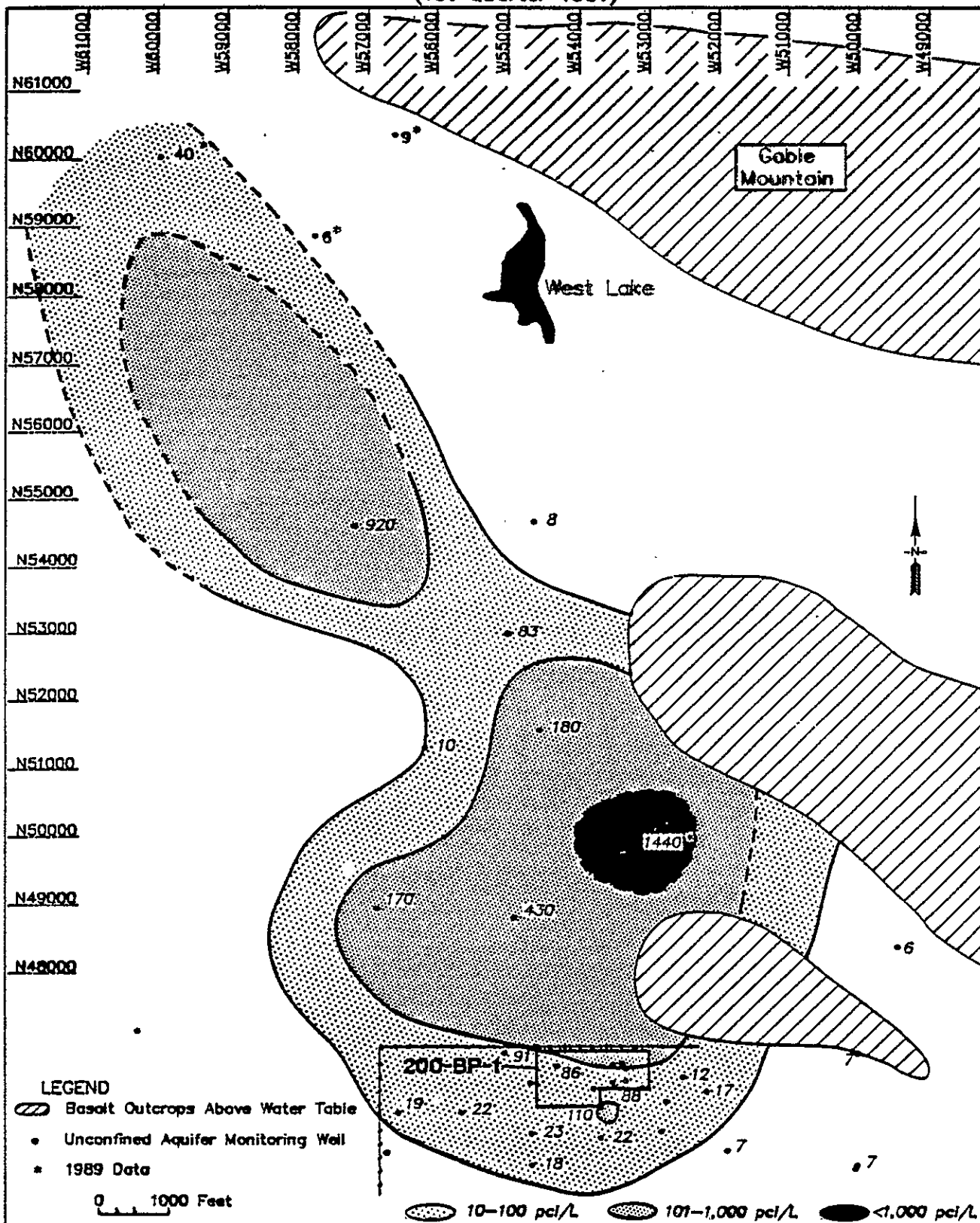
3-2-1-63-1963



Preliminary Plume Map - Total Cyanide (Maximum Concentrations from 1st and 2nd Quarter Data 1991)



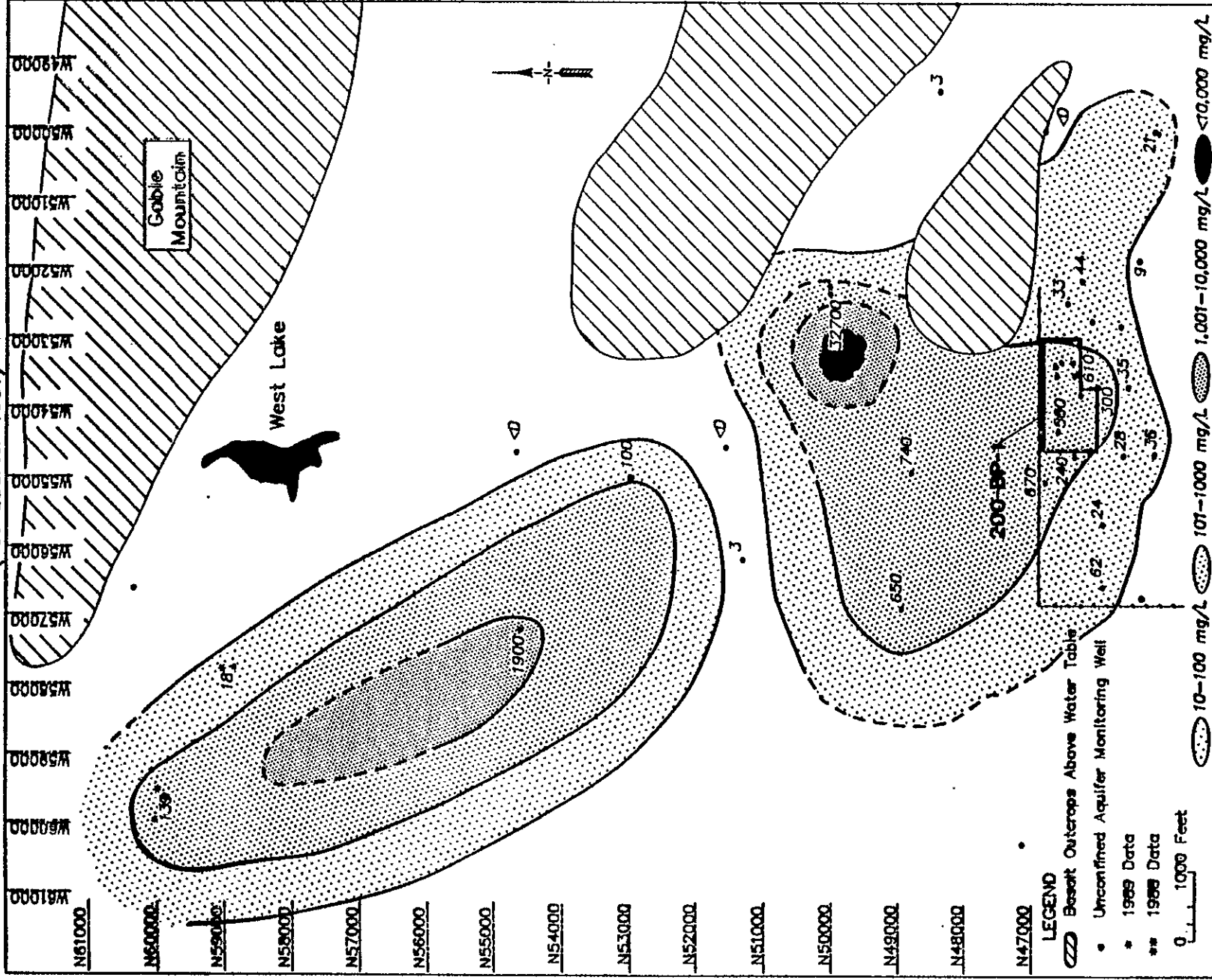
Preliminary Plume Map - Gross Beta (1st Quarter 1991)



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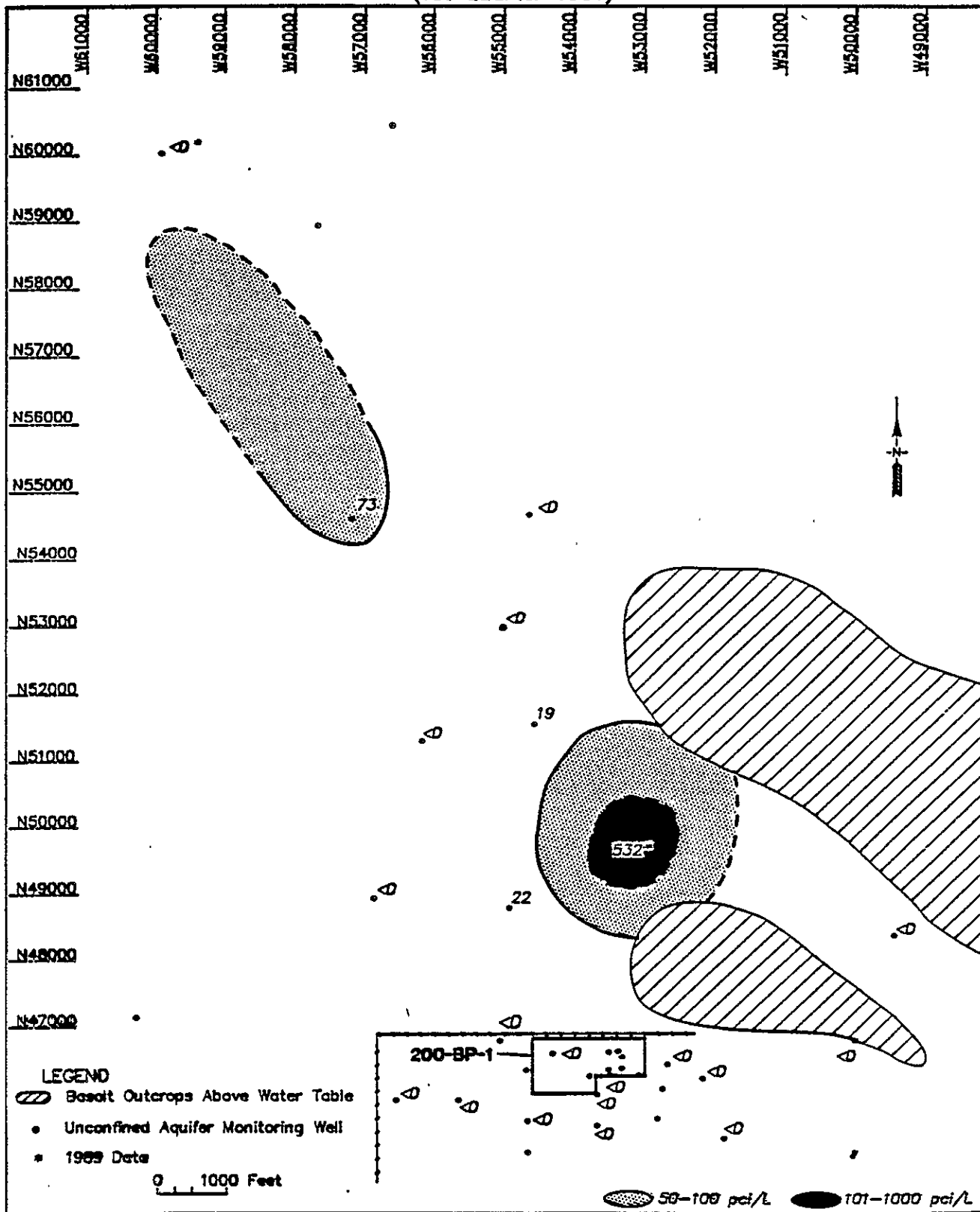
Preliminary Plume Map - Technetium-99

(1st Quarter 1991)



GEOSCI\111991-0

Preliminary Plume Map - Cobalt 60 (1st Quarter 1991)



PHASE 1B MONITORING WELL SITING RECOMMENDATIONS

- **INSTALL SHALLOW GROUNDWATER MONITORING
WELL AT APPROXIMATELY N.57000 W.59000**
 - **PROVIDES CONTROL ON NORTHERN EXTENT OF PLUME**
 - **PROVIDES ADDITIONAL DATA POINT FOR WATER LEVEL
MEASUREMENTS**

ADDITIONAL RECOMMENDATIONS

- **INVESTIGATE REMEDIATION OF WELLS 699-60-60, 699-59-58, AND 699-60-57 FOR INCORPORATION INTO THE GROUNDWATER MONITORING NETWORK**
 - **PROVIDES CONTROL ON NORTHERN EXTENT OF PLUME**
 - **PROVIDES ADDITIONAL DATA POINTS FOR WATER LEVEL MEASUREMENTS**

HYDROLOGIC TEST WELL INSTALLATION

- **SEVERAL NEW WELLS IDENTIFIED FOR AQUIFER TESTING (TASK 11):**

699-52-54

699-52-57

699-55-55

699-49-57B

699-50-53B

299-E33-40

- **CONSTANT DISCHARGE/RECOVERY TESTS IN WELL 699-55-55 NOT FEASIBLE DUE TO INADEQUATE BOREHOLE DIAMETER AND HIGH CONDUCTIVITY GRAVELS**

HYDROLOGIC TEST WELL INSTALLATION

(CONTINUED)

● TESTING AT 699-55-55 IMPORTANT FOR SEVERAL REASONS:

- 1) WELL SITE IS APPARENTLY OUTSIDE INFLUENCE OF PLUME BUT IS LOCATED IN SIMILAR HYDROGEOLOGIC SETTING**
- 2) VERY LITTLE QUALITY HYDRAULIC DATA FOR HIGH CONDUCTIVITY ZONES IN THE HANFORD FORMATION**
- 3) WELL CONFIGURATION/CONSTRUCTION AT WELL CLUSTER 699-53-55A/B/C MAY NOT PERMIT QUALITY TESTING**

HYDROLOGIC TEST WELL INSTALLATION

(CONTINUED)

● GENERAL TEST CONFIGURATION:

- 1) LARGE DIAMETER PUMPING WELL (MINIMUM 16" DIAMETER)**
- 2) PARTIALLY PENETRATING PUMPING WELL**
- 3) WELL 699-55-55 FUNCTIONS AS OBSERVATION WELL**
- 4) INSTALLATION OF SECOND OBSERVATION WELL (OPTIONAL)**
- 3) PUMPING WELL EVENTUALLY COMPLETED AS DEEP MONITORING WELL**

HYDROLOGIC TEST WELL INSTALLATION

(CONTINUED)

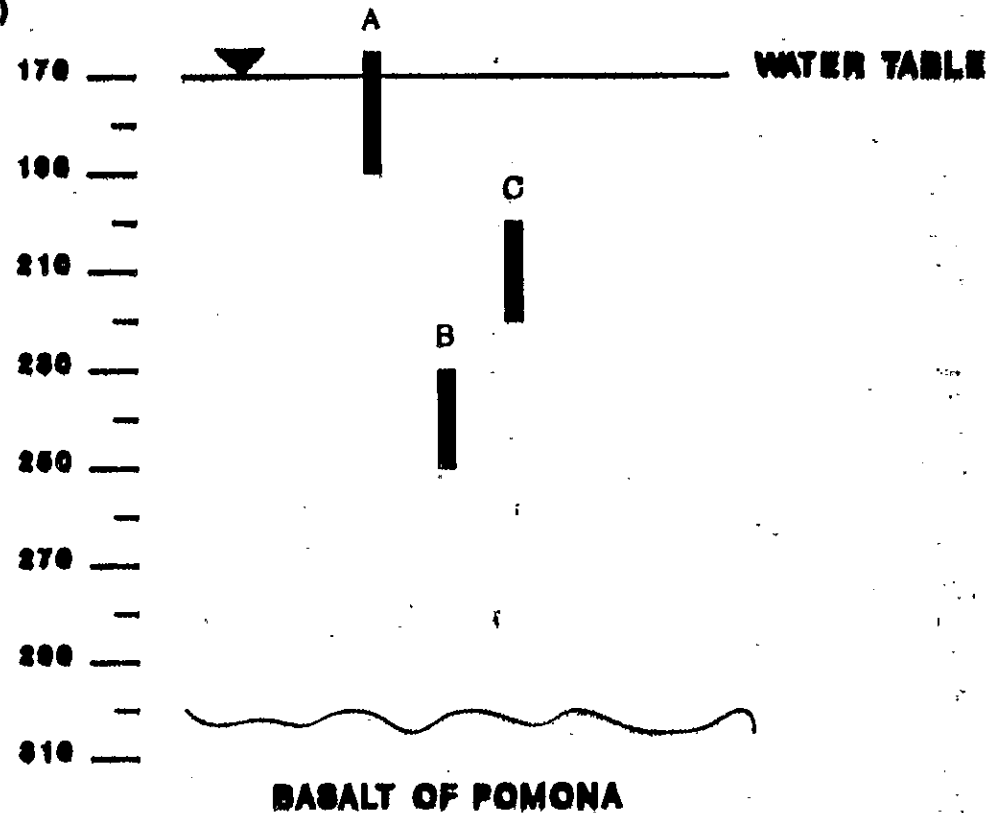
● ADDED BENEFITS OF PERMANENT WELL CLUSTER AT 699-55-55:

- 1) AID DETERMINATION OF VERTICAL HYDRAULIC HEAD
GRADIENT IN THE EROSIONAL WINDOW**
- 2) DEEP SAMPLING POINT IN THE EROSIONAL WINDOW**

7 2 1 2 4 5 3 1 6 2 4

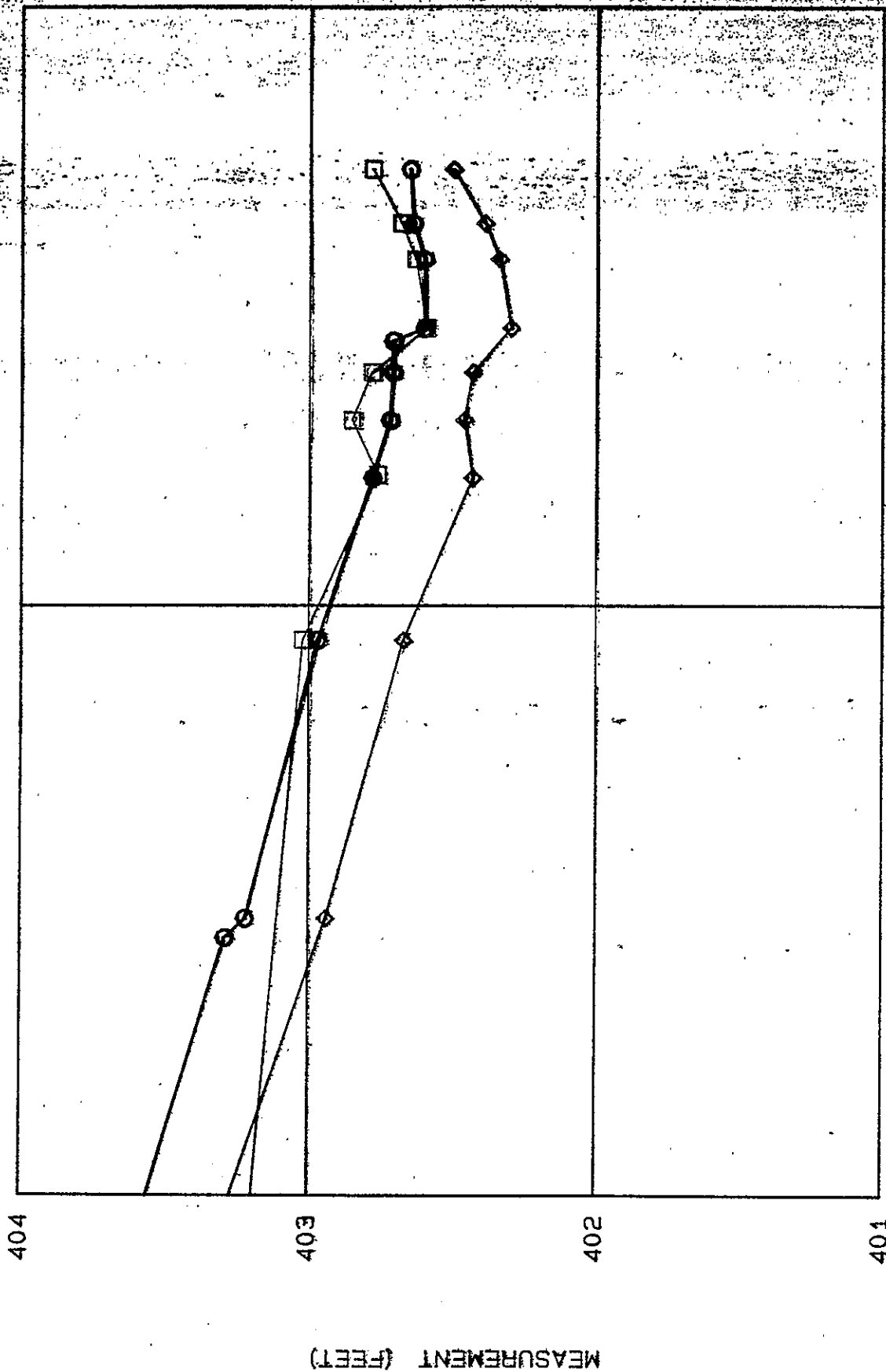
APPROXIMATE SCREENED/PERFORATED INTERVALS FOR WELL CLUSTER 699-53-55A/B/C

DEPTH BELOW
GROUND SURFACE
(FEET)



7 2 1 2 4 6 3 1 6 2 5 HYDROGRAPH FOR WELL CLUSTER 699-53-55A/B/C

Well: 6-53-55A 6-53-55B 6-53-55C
Code: HYD □ HYD ◇ HYD ○



RECOMMENDATIONS

● INSTALL LARGE DIAMETER TEST WELL/DEEP GROUNDWATER MONITORING WELL IN NEAR-VICINITY OF WELL 699-55-55

- WELL IS DRILLED AS LARGE DIAMETER TEST WELL •
- COMPLETED AT BOTTOM OF UNCONFINED AQUIFER •
- OPTION TO DRILL ADDITIONAL OBSERVATION WELL •
- PERMITS HYDROLOGIC TESTING WITH WELL 699-55-55 FUNCTIONING AS AN OBSERVATION POINT
- PROVIDES A WELL CLUSTER FOR DETERMINATION OF VERTICAL HYDRAULIC GRADIENT
- PROVIDES A DEEP SAMPLING POINT IN THE EROSIONAL WINDOW